



Levee Provides Time For Animal Rescue

Full Mitigation Best Practice Story

Cooke County, Texas

Cooke County, TX - Attempting to avoid the rushing waters of the Trinity River, a little elephant clung tightly to a tree during the 1981 flood in Gainesville, Texas. The Frank Buck Zoo lost more than 40 animals in the flood. To ensure the safety of the animals and to minimize the effects of future flooding, an earthen levee was erected. On the morning of June 18, 2007, that levee bought the staff much needed time to evacuate the animals.



"Because there was no levee in place in 1981, the staff had no recourse but to cut fences and free the animals with the intent of rounding them up later," said Susan Kleven, director of the zoo. "It was not a good situation. As a result, we had a high mortality rate." Adds Wally Cox, assistant emergency management coordinator, "Monkeys were literally running down Interstate 35."

Built in a creek bed on 13-acres of land, Frank Buck Zoo is home to approximately 130 animals from four continents. The zoo opened in 1951 with a mission to offer a wholesome, educational environment, one that has been threatened repeatedly by floods.

As a result, the city proposed to construct a flood control levee. The project was initiated April 1991 and completed November 1993. Total project cost was \$127,184. Gainesville received a \$63,592 grant from the Federal Emergency Management Agency (FEMA) through its Hazard Mitigation Grant Program (HMGP).

The HMGP paid 50 percent of the cost. On December 3, 1993, the President signed the Hazard Mitigation and Relocation Act of 1993, which significantly increased funding available for hazard mitigation grants under section 404 of the Stafford Act. Presently HMGP pays 75 percent on approved projects that will prevent or reduce damage from natural hazards. The grants are made available for both public and private projects. Funds are administered by the state.

"It was about three a.m. the morning of June 18 when a system came in and just stalled out over Gainesville. They measured that it dumped an inch of rain every 15 minutes for about two-and-a-half hours," said Kleven. Within a matter of hours water in the Trinity River had risen 28.6 feet above flood stage.

"There is a phenomenon called capture myopathy. This occurs when animals are placed under stress during capture. The levee allowed us to monitor the situation," Kleven said. "We had an idea that when the water reached a certain level we needed to evacuate. We could gauge how much time we had to capture the animals and get them out of harm's way."

On June 18, 2007, 112 animals were evacuated to a facility outside the floodplain before the levee was topped. Buildings located on higher grounds remained unscathed. Those same buildings were under water in the flood of 1981.

"The levee definitely protected the animals, and the structures that were on higher grounds and did not compromise the safety of the staff," Kleven said. "Otherwise, they would have been confronted with flood waters while rescuing the animals. We also were able to re-open the zoo more quickly than we did in 1981." The zoo opened within three days after the 2007 flood.

Activity/Project Location

Geographical Area: **Single County in a State**

FEMA Region: **Region VI**

State: **Texas**

County: **Cooke County**

City/Community: **Gainesville**

Key Activity/Project Information

Sector: **Public**

Hazard Type: **Flooding**

Activity/Project Type: **Flood Control**

Activity/Project Start Date: **04/1991**

Activity/Project End Date: **11/1993**

Funding Source: **Hazard Mitigation Grant Program (HMGP)**

Application/Project Number: **9999**

Activity/Project Economic Analysis

Cost: **\$127,184.00 (Actual)**

Non FEMA Cost:

Activity/Project Disaster Information

Mitigation Resulted From Federal
Disaster? **Yes**

Federal Disaster #: **646 , 09/21/1981**

Federal Disaster Year: **1981**

Value Tested By Disaster? **Yes**

Tested By Federal Disaster #: **No Federal Disaster specified**

Year First Tested: **2007**

Repetitive Loss Property? **Yes**

Reference URLs

Reference URL 1: **<http://www.frankbuckzoo.com/>**

Reference URL 2: **http://www.fema.gov/plan/prevent/fhm/lv_intro.shtm**

Reference URLs

Main Points

- 1981 flood left 40 animals from the Frank Buck Zoo dead and countless others roaming around Gainesville, Texas.
- Zoo came a plan to construct a flood control levee to prevent future deaths and to ensure the safety of the staff while evacuating animals.
- FEMA's Hazard Mitigation Grant Program (HMGP) provided funding.
- Levee put to the test in June 2007 - the animals were evacuated safely, there was minimal damage, and the zoo was able to re-open within three days.



Zoo staff member boards camel for evacuation



Ostriches stand on higher ground